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War and first onset of suicidality: the role of mental disorders

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Abstract

Background—Suicide rates increase following periods of war; however, the mechanism through which this occurs is not known. The aim of this paper is to shed some light on the associations of war exposure, mental disorders, and subsequent suicidal behavior.

Method—A national sample of Lebanese adults was administered the Composite International Diagnostic Interview to collect data on lifetime prevalence and age of onset of suicide ideation, plan, and attempt, and mental disorders, in addition to information about exposure to stressors associated with the 1975–1989 Lebanon war.

Results—The onset of suicide ideation, plan, and attempt was associated with female gender, younger age, post-war period, major depression, impulse-control disorders, and social phobia. The effect of post-war period on each type of suicide outcome was largely explained by the post-war onset of mental disorders. Finally, the conjunction of having a prior impulse-control disorder and

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Declaration of Interest

Dr Kessler has been a consultant for AstraZeneca, Analysis Group, Bristol–Myers Squibb, Cerner-Galt Associates, Eli Lilly & Company, GlaxoSmithKline Inc., HealthCore Inc., Health Dialog, Integrated Benefits Institute, John Snow Inc., Kaiser Permanente, Matria Inc., Mensante, Merck & Co. Inc., Ortho- McNeil Janssen Scientific Affairs, Pfizer Inc., Primary Care Network, Research Triangle Institute, Sanofi- Aventis Groupe, Shire US Inc., SRA International Inc., Takeda Global Research & Development, Transcept Pharmaceuticals Inc., and Wyeth-Ayerst; has served on advisory boards for Appliance Computing II, Eli Lilly & Company, Mindsite, Ortho-McNeil Janssen Scientific Affairs, Plus One Health Management and Wyeth-Ayerst; and has had research support for his epidemiological studies from Analysis Group Inc., Bristol-Myers Squibb, Eli Lilly & Company, EPI-Q, GlaxoSmithKline, Johnson & Johnson Pharmaceuticals, Ortho-McNeil Janssen Scientific Affairs., Pfizer Inc., Sanofi-Aventis Groupe, and Shire US, Inc.

either being a civilian in a terror region or witnessing war-related stressors was associated with especially high risk of suicide attempt.

Conclusions—The association of war with increased risk of suicidality appears to be partially explained by the emergence of mental disorders in the context of war. Exposure to war may exacerbate disinhibition among those who have prior impulse-control disorders, thus magnifying the association of mental disorders with suicidality.

Keywords

Mental disorders; suicide; war

Introduction

The occurrence of war is perhaps one of the most stressful experiences a person can encounter and so it is expected that suicidal behavior would increase following periods of war, as it would following other stressful and traumatic events (Dube *et al*. 2001; Borges *et al*. 2008). Interestingly, prior studies have shown that suicide rates actually decrease during war time (Durkheim, 1951; Lester, 1993), but increase following war (Durkheim, 1951), while other studies have found an increase of suicide during war in comparison to pre- and post-war periods (Bosnar *et al*. 2004). Notably, however, these studies have focused on national suicide rates and not on rates among those who experienced the war first-hand.

The purpose of the current study is to advance the understanding of the association between war exposure and subsequent suicidal behavior. We hypothesized that people directly exposed to stressful war-related events would have an increased risk of subsequent suicidal behavior. We examined a range of different war-related stressors to determine which types of events are most likely to increase the risk of suicidal behavior. If war exposure is associated with an increased risk of suicidal behavior, it would be important to know why this association exists. One possibility is that, like other stressful events, war-related stressors increase the risk of mental disorders, which in turn increase the risk of suicidal behaviors. Another possibility is that war exposure exacerbates the experience of distress among those with preexisting mental disorders, in which case we would expect an interaction between war exposure and the presence of mental disorders in predicting subsequent suicide attempts. The present article is aimed at distinguishing these possibilities by analyzing epidemiological data obtained in a national survey of Lebanon. The entire country of Lebanon was exposed to a period of war (1975–1989). During this period, about 15% of the population was injured, one third of these being fatalities due to bombing and sniper fire. We also examine which aspects of war are related to first onset of suicidal behavior.

Method

Sample

The data reported here are from the Lebanese Evaluation of the Burden of Ailments and Needs Of the Nation (L.E.B.A.N.O.N.) study (Karam *et al*. 2006, 2008*a*). This study was conducted by the Institute for Development Research, Advocacy and Applied Care

(IDRAAC), in association with the Department of Psychiatry and Clinical Psychology at Balamand University and St George Hospital University Medical Center as part of the World Health Organization (WHO) World Mental Health (WMH) initiative (Kessler & Ustun, 2004).

Participants

A nationally representative sample was selected according to a multi-stage clustered probability household sample of non-institutionalized adults (aged ≥18 years). Individuals with cognitive or physical impairments preventing them from completing the interview were not included in this study. Further information concerning sample selection can be found in previous publications (Karam *et al*. 2006, 2008*a*). The response rate was 70%. The total sample consisted of 2857 participants (54.6% females), with 33.8% of the participants aged 18–34 years, 32.6% 35–49 years, and the rest aged >49 years (14.3% >64 years). The study procedures were approved by the Balamand University Medical School Ethics Committee and Institutional Review Board.

Procedures

Face-to-face household interviews were performed during the period of September 2002 to September 2003. It should be noted that the data were collected before the July 2006 war that occurred in Lebanon. Interviewers were trained by IDRAAC (the Arabic CIDI training center) to administer the Arabic version of the Composite International Diagnostic Interview (CIDI) version 3.0 (Kessler & Ustun, 2004). CIDI 3.0 is a fully structured lay-administered interview producing both ICD-10 and DSM-IV diagnoses of mental disorders. Interviews were administered in two parts. All 2857 participants were administered part I in order to assess for the presence of core mental disorders and suicidality. Part II, which assessed other disorders, risk factors and correlates, was administered to all respondents who screened positive for any core mental disorder or suicidal behavior in part I as well as a 20% probability subsample of controls from part I. Part I was weighted for differential probability of selection within households and residual discrepancies with government population data on sociodemographic and geographical variables (Central Administration for Statistics, 1998). Part II was additionally weighted for differential probability of selection from the part I sample.

Measures of suicide-related outcomes

Three suicide-related outcomes (ideation, plan, attempt) were assessed using the suicidality section of CIDI 3.0. Respondents were asked questions about lifetime suicide ideation (‘Have you ever *seriously* thought about committing suicide ? ‘). Those who responded affirmatively were asked about lifetime suicide plan (‘Have you ever made a plan for committing suicide ?’) and suicide attempt (‘Have you ever attempted suicide? ‘). Positive responses to any of the suicide-related outcomes were then followed by questions about age-of-onset of suicide ideation, plan and attempt, and the number of lifetime attempts. Respondents who reported attempting suicide in the past 12 months were asked about the method they used. Because potentially sensitive behaviors are more frequently reported in self-administered rather than interviewer-administered surveys (Turner *et al*. 1998),

questions from the suicide module were printed in a self-administered booklet and referred to by letter codes. The interviewer read the items aloud only if the respondent could not read.

Risk factors

Sociodemographic factors—Sociodemographic correlates used in the lifetime and first-onset analyses included age cohort at the time of interview (18–34, 35–49, 50–64, ≥65 years), gender, education [student, low (none/only primary), middle-low (intermediate/some secondary), middle (completed secondary without university), high (university degree)] and marital status (never married, previously married, married).

War exposure—Ten war experiences were assessed as risk factors for first onset of suicide ideation, plan and attempt. These experiences included being a: civilian in a war region, civilian in a terror region (i.e. ongoing terror for political, ethnic, religious or other reasons), refugee, rescue worker, witness of death or injury, witness of atrocities (i.e. mutilated bodies or mass killings) ; as well as experiencing : the death of a loved one, trauma to a loved one, kidnapping, being robbed or threatened by weapon. We also examined the increased odds of suicidal behavior associated with three war-related periods: pre-war (before 1975), during war (1975–1989), and post-war (1990 to time of interviews).

Mental disorders—Specific DSM-IV disorders were evaluated as risk factors for first onset of suicide-related outcomes (ideation, plan, attempt). Presence of all disorders was determined using the WMH-CIDI (see above, Kessler & Ustun, 2004). Mood disorders included major depressive disorder (MDD), dysthymia, and bipolar I/II disorders. Anxiety disorders included panic disorder, generalized anxiety disorder (GAD), specific phobia, social phobia, post-traumatic stress disorder (PTSD), and childhood/adult separation anxiety disorder. Impulse-control (conduct disorder, attention deficit hyperactivity disorder, intermittent explosive disorder), and substance use disorders were considered as classes of disorders due to small numbers diagnosed with the individual disorders.

Statistical analysis

A series of discrete time survival models with person-year as unit of analysis (Efron, 1988) was estimated to predict the first onset of each outcome. Variables that change values over time such as mental disorders, marital status, education, exposure to war, and war-related period were entered in the survival analyses as time-varying predictors. All models controlled for sociodemographic variables. One set of models included exposure to war and war-related periods as the independent variables of primary interest. Another set of models included pre-existing mental disorders as the independent variables of primary interest. A third set of models examined the extent to which the onset of mental disorders during each war period (i.e. pre-, during and post-war) explained the subsequent onset of suicide ideation, plan and attempt. We hypothesized that if the association of post-war period and suicidality exists because of the onset of mental disorders during the post-war period, then only mental disorders that begin after the war should decrease the association between post-war period and suicidality, whereas mental disorders with an earlier onset should not. A

fourth and final set of models expanded on these earlier models to test the interactions of pre-existing mental disorders and exposure to war experiences.

Survival coefficients were exponentiated and are reported here as odds ratios (ORs) with 95% confidence intervals (CIs). Standard errors of prevalence estimates and CIs were estimated using the Taylor series method (Wolter, 1985) to correct for the effects of geographical clustering of the sample and weighting. The SAS 9.1 and SUDAAN software systems were used to perform these calculations. Statistical significance consistently evaluated using 0.05-level two-sided tests (borderline significance was considered for $0.05<p<0.1$).

Results

Prevalence of suicide-related outcomes

The lifetime prevalence of suicide ideation, plan and attempt in the total sample was 4.3%, 1.7% and 2.0%, respectively (Table 1). The prevalence (±standard error) of suicide ideation, plan and attempt in the 12 months preceding the study interview was 1.2% (±0.27), 0.47% (±0.15) and 0.32% (±0.12), respectively. Younger age cohorts reported significantly higher prevalence of suicide ideation (χ^2=9.5, p=0.02) and plan (χ^2=9.2, p=0.03), with borderline significance for attempt (χ^2=7.2, p=0.07). Prevalence of all three outcomes was significantly higher among females than males ($\chi_1^2=10.1-19.1$, p=0.001–0.005). Among suicide ideators, 38.4% (±5.0) ever made a suicide plan and 46.4% (±5.2) ever attempted suicide. Among ideators who had a lifetime plan, 72.4% (±6.9) attempted suicide, while 30.1% (±6.3) of ideators without a lifetime plan attempted suicide. Sixty percent (±5) of attempters attempted suicide only once in their lives, 25% (±5) attempted twice, and 15% (±4) attempted three or more times. The methods used in attempting suicide in the past 12 months included: medication (66.4%), poisonous material (22%), sharp objects (6.2%) and illicit drugs and/or alcohol (5.1%).

Age-of-onset of suicide-related outcomes

The age-of-onset distributions of suicide ideation, plan, and attempt were significantly different for males and females, with females reporting earlier age of onset than males for all outcomes ($p<0.01$). (Detailed results are available upon request.) Nearly half (45%) of females who reported ever thinking seriously of suicide had an onset of this ideation before age 18 years compared to only 7.8% of males. Comparable proportions of lifetime plans and attempts that occurred before age 18 years among females *v*. males were 54% *v*. 0.0% for plans and 57% *v*. 0.0% for attempts.

War as a risk factor for first onset of suicide-related outcomes

Controlling for sociodemographic variables, all three suicide-related outcomes had the highest odds of onset during the post-war period compared to either pre-war or during the war (Table 2). Of the 10 specific war-related experiences assessed, being a civilian in a terror region was the only significant predictor of subsequent onset of suicide ideation. Being a civilian in a terror region and witnessing atrocities were the only two significant

predictors of suicide attempt. These associations were largely unchanged when war period and war experiences were entered into the same model simultaneously.

Pre-existing mental disorders as risk factors for first onset of suicide-related outcomes

The mental disorders considered in the survey had consistently positive and largely significant bivariate associations with subsequent onset of all three suicide-related outcomes (Table 3). Odds ratios were in the range of 1.7–12.7 predicting suicide ideation, 2.1–30.6 for suicide plans, and 2.0–21.0 for suicide attempts. However, in multivariate analyses that adjusted for co-morbidity, the only associations that remained significant were those for MDD and impulse-control disorders predicting all three outcomes and social phobia predicting suicide ideation and plans.

Association between war and mental disorders in predicting first onset of suicidality

To examine the extent to which the onset of mental disorders explains the association between post-war period and the onset of suicidality, we examined three multivariate models for each suicidal outcome: one including only significant and borderline significant mental disorders that had their onset during the prewar period, one that included mental disorders that had their onset during the war, and one that included mental disorders that had their onset during the postwar period (Table 4).

Suicide ideation—In the model that included pre-war mental disorders, the association between post-war period and suicide ideation (OR 4.1) was virtually unchanged from the bivariate association reported in Table 2 (OR 4.0). In this model, impulse-control disorders (OR 17.1) and social phobia (OR 12.0) continued to predict suicide ideation, whereas MDD was no longer a significant predictor. In the model that included mental disorders with an onset during war, the effect of post-war period was again unchanged (OR 4.0) ; MDD (OR 3.1) and social phobia (OR 5.8) remained significant predictors, whereas impulse-control did not. In the model including mental disorders with an onset after the war, the effect of post-war period decreased (OR 2.7), and there was a significant effect for MDD (OR 10.3), impulse-control disorders (OR 15.3) and social phobia (OR 9.6).

Suicide plan—A similar pattern of findings was observed for suicide plan. In the model including pre-war mental disorders, the effect of post-war period on suicide plan (OR 6.0) is virtually unchanged from the model in Table 2 (OR 5.7), and the effects of MDD and social phobia remain significant whereas the effect of impulse-control disorders is no longer significant (the CIs in these models are broad due largely to the small sample sizes in some cells). In the model including mental disorders with onset during war, the effect of post-war period again is unchanged (OR 5.4) and none of the mental disorders are significantly associated with suicide plan. In the model including mental disorders with onset after the war, the effect of post-war period is decreased and no longer significant (OR 3.3), whereas each disorder had a strong, significant association with the subsequent onset of a suicide plan.

Suicide attempt—Results also were similar in the prediction of suicide attempts. Specifically, in the model including mental disorders occurring before the war, the effect of

postwar period was unchanged (OR 2.6) from Table 2 (OR 2.4), and MDD, impulse-control disorders, and substance use disorders predicted the onset of suicide attempt. In the model including mental disorders with onset during war, the effect of post-war period also was unchanged (OR 2.4), and MDD and social phobia remained associated with suicide attempt. In the model including mental disorders with onset after war, the effect of post-war was decreased and no longer significant (OR 1.7), whereas MDD, impulse-control disorders, and substance use disorders all had strong, significant associations with the subsequent onset of a suicide attempt.

Interaction between mental disorders and exposure to war experiences

An analysis of the interactions between each significant mental disorder and the two types of war experiences found that the association between impulse-control disorders and the first onset of a suicide attempt was significantly higher in the presence than in the absence of war-related stressors. More specifically, in a model including war experiences, each mental disorder, and the interaction of impulse-control disorders with each war experience – the interaction of an impulse-control disorder with being a civilian in a terror region (OR 6.7) and with witnessing atrocities (OR 5.3) both predicted the occurrence of a suicide attempt. The associations of war experiences (i.e. being a civilian in a terror region and witnessing atrocities) with suicide attempts were non-significant (OR 1.1 and 0.9, respectively) in the absence of impulse- control disorders (additional data available upon request).

Discussion

The lifetime prevalence of suicide ideation, plan and attempt were 4.3%, 1.7%, and 2%, respectively in this national survey from Lebanon. The relatively low rate of suicide ideation compared to the rates found in many previous studies is likely due to the nature of the question asked by the CIDI, which asks about ‘serious ‘ thoughts. The majority of suicide attempts were through consumption of medication or poisonous material with none using violent methods of attempt. Suicidality was more common among younger cohorts with females having an earlier age of onset than males. On an international level, the lifetime prevalence of suicide attempt found here ranks in the middle of the range in the 17 other WMH countries (mean 2.7%) (Nock *et al*. 2008). However, we have no regional comparisons as published nationally representative data on suicidality from other Arab countries are non-existent (Karam *et al*. 2007, 2008*b*).

Onset of suicide-related behaviors was found here to be highest in the post-war period. In addition, witnessing war atrocities or being a civilian in a terror region were both associated with first suicide attempt. Being a civilian in a terror region was also associated with onset of suicide ideation. The literature on the effect of war on suicidal behavior is sparse. The finding of this study, that first onset of suicidality was most common in the post-war period is reminiscent of the classic finding of Durkheim that suicides increase after war (Durkheim, 1951). Although we did not assess completed suicide, attempted suicide is well known to be a risk factor for completed suicide (Suokas *et al*. 2001).

Most mental disorders were related to the first onset of all three suicide-related outcomes on a bivariate level. However, after adjusting for co-morbidity, MDD, impulse-control

disorders, and social phobia stood out as the only risk factors for the three suicide outcomes, and substance abuse for suicide attempt only. Whereas MDD and impulse-control disorders have been found to predict suicidal behaviors in a number of other studies (Beautrais *et al*. 1996; Borges *et al*. 2008; Nock *et al*. 2009), the finding that social phobia is a significant predictor of suicidality has been found in fewer studies (Schneier *et al*. 1992; Olfson *et al*. 2000; Katzelnick *et al*. 2001; Sareen *et al*. 2005). The exact nature of this association is unclear. One possible interpretation of this finding is that anxiety disorders which have been shown to be elevated among those exposed to war (Karam *et al*. 2008*a*), take on special importance in the context of war, possibly by leading to perceptions of entrapment, and a lack of belonging, which have been proposed to lead to suicidal thoughts and behaviors (e.g. Joiner, 2005; Cougle *et al*. 2009; Taylor *et al*. 2011). However, the fact that the effects of social phobia on suicidal outcome were not consistently stronger during the post-war period and that there was no significant interaction between social phobia and war-related stressors is inconsistent with this possibility. Another possibility is that social phobia is of special importance in Lebanon for as yet unexplained cultural reasons either as a causal risk factor or as a risk marker for other more fundamental causes of suicide-related behaviors. Further investigation of variation in broader patterns of associations involving social phobia with other variables in the Lebanese WMH data compared to WMH data in other countries would be required to take the first step in an investigation of this possibility.

Importantly, these results revealed that when war period and mental disorders were examined in the same model, only disorders that had an onset after the war explained (i.e. reduced to a non-significant level) the effect of war period on each suicidal outcome, whereas disorders with earlier onsets did not. This pattern is most reasonably interpreted as indicating that the effects of war-related experiences on suicidal behaviors are mediated by mental disorders. This possibility is consistent with the previously reported finding that war-related experiences are powerful predictors of first onset of mental disorders in our sample (Karam *et al*. 2006, 2008*a*).

We also observed an interaction between impulse-control disorders and war-related experiences (i.e. civilian in a terror region and witnessing atrocities) in predicting first suicide attempts. Impulse-control disorders predicted suicide attempts much more strongly among respondents who were exposed to those experiences than among those who were not. These experiences did not predict suicide attempts significantly among respondents who did not have impulse-control disorders. At least two possible interpretations exist for this interaction. One is that war-related stressors exacerbate the effects of impulse-control disorders on suicide attempts as observed by others (Plutchik, 1995). The other is that exposure to war-related stressors is a marker of pre-existing suicide attempt risk among people with impulse-control disorders. There is no clear way to adjudicate between the two possibilities with the data reported here, as both are consistent with the interaction. We could distinguish between the two possibilities, at least in theory, by using the fact that we have information about the pre-war association between impulse-control disorders and suicidality among respondents who were subsequently exposed to war-related stressors. We would expect this association to be significantly elevated if unmeasured selection factors into exposure to war-related stressors account for the interaction between impulse-control

disorders and exposure to war-related stressors, but not otherwise. However, analysis of this issue would require us to calculate three-way interactions of impulse-control disorders×time period×exposure to war-related stressors. We have inadequate statistical power to do this, making it impossible for us to distinguish between these different interpretations with the data available to us.

The results of this study should be interpreted in the context of a number of limitations. First, the data were based on retrospective self-reports which introduces the possibility of recall bias in the data. Second, participants' responses may have been influenced by cultural acceptability of reporting suicidal behaviors, religion, and mental disorders. Third, some mental disorders known to increase the risk of suicidality, such as personality disorders, schizophrenia, and other non-affective psychotic disorders were not assessed in this study. Fourth, other types of self-injurious behaviors such as non-suicidal self-injury were not assessed in this study. Fifth, because of time constraints, we did not ask the subjects about what they perceived were the proximal factors that might have contributed to their suicidality. Sixth, we did not have data on completed suicide. Seventh, our list of war-related stressors was not comprehensive. Finally, some CIs are wide due to small sample size in some cells.

Despite these limitations, the results reported here suggest that mental disorders were strong predictors of first onset of suicidality in Lebanon. The results also suggest that the occurrence of the war and exposure to war-related stressors played a part in increased risk of suicide-related behaviors and that these associations are at least partially explained by the emergence of mental disorders that more proximally create risk of suicidality. Additionally, we found that war-related experiences might exacerbate the effects of impulse-control disorders on suicide attempts, although these interactions need to be replicated in other studies and, if replicated, investigated in more detail to understand their underlying dynamics before our provisional results regarding these interactions are accepted as genuine.

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Table 1

Lifetime prevalence of suicidality in Lebanon

	Ideation			Plan			Attempt		
	N	**%**	**(S.E.)**	***N***	**%**	**(S.E.)**	***N***	**%**	**(S.E.)**
Total sample	117	4.3	(0.6)	39	1.7	(0.4)	54	2.0	(0.3)
Sex									
Male	32	2.7	(0.6)	9	0.9	(0.3)	11	0.9	(0.3)
Female	85	6.0	(1.0)	30	2.4	(0.6)	43	3.1	(0.6)
χ^2_1 [*p* value]	18.2 [0.001]			10.1 [0.005]			19.1 [0.001]		
Age cohort (years)									
18–34	58	5.5	(1.0)	23	2.4	(0.6)	27	2.6	(0.5)
35–49	35	3.8	(0.7)	8	0.8	(0.3)	19	2.0	(0.5)
50–64	14	2.7	(0.9)	5	1.0	(0.5)	6	1.1	(0.5)
≥65	10	3.0	(0.7)	3	1.4	(0.8)	2	0.9	(0.6)
χ^2_3 [*p* value]	9.5 [0.02]			9.2 [0.03]			7.2 [0.07]		

N, Unweighted frequency ; S.E. standard error.

Analyzed for the total sample of respondents (*n*=2857).

Table 2

War as a risk factor for first onset of suicidality in Lebanon[a]

	Adjusted for sociodemographic variables[b]			Adjusted for sociodemographic variables[b] and includes all war variables simultaneously		
	Ideation	Plan	Attempt	Ideation	Plan	Attempt
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
War-related periods						
Pre-war	0.6 (0.1–3.5)	0.6 (0.2–2.8)	0.6 (0.1–3.3)	0.5 (0.1–3.5)	0.6 (0.2–2.8)	0.7 (0.1–3.7)
Post-war	4.0* (1.9–8.3)	5.7* (1.6–19.9)	2.4* (1.1–5.3)	4.2* (2.0–8.7)	5.7* (1.6–19.9)	2.6* (1.2–5.4)
During war	1.0	1.0	1.0	1.0	1.0	1.0
Exposure to war experiences						
Civilian in a terror region	3.1* (1.4–7.0)	–	4.0* (1.7–9.5)	3.8* (1.7–8.6)	–	3.9* (1.7–9.0)
Witnessing atrocities	–	–	3.0* (1.2–8.0)	–	–	3.4* (1.3–9.1)

OR, Odds ratio ; CI, confidence interval.

[a] Discrete time survival models, assessed for respondents who completed part II (n=1031).

[b] Sociodemographic variables included age, sex, education, marital status.

* Significant at the 0.05 level, two-sided test.

Table 3

Mental disorders as risk factors for first onset of suicidality in Lebanon[a]

	Unadjusted for co-morbidity						Adjusted for co-morbidity					
	Ideation		Plan		Attempt		Ideation		Plan		Attempt	
Disorder	(95% CI)		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
I. Anxiety disorders												
Panic disorder	9.5*	(1.1–81.7)	†	†	†	†	–	–	–	–	–	–
Generalized anxiety disorder	7.2*	(1.9–27.0)	4.3	(0.5–36.5)	8.3*	(1.9–35.5)	3.0	(0.8–11.0)	1.1	(0.1–11.0)	2.7	(0.6–11.3)
Specific phobia	1.7	(0.8–3.3)	2.1	(0.8–5.5)	2.0	(0.9–4.7)	0.7	(0.2–2.8)	1.1	(0.2–4.9)	1.5	(0.4–5.2)
Social phobia	9.5*	(2.8–32.6)	13.2*	(2.2–80.8)	5.0*	(1.4–18.0)	10.5*	(2.2–48.8)	11.5*	(1.5–85.4)	3.7	(0.9–15.6)[c]
Posttraumatic stress disorder	2.5	(0.5–11.7)	5.9*	(1.1–31.3)	4.6*	(1.0–20.8)	0.8	(0.1–4.2)	1.0	(0.1–9.1)	1.5	(0.3–7.3)
Separation anxiety[b]	2.2	(0.8–5.6)	3.9*	(1.4–10.8)	2.0	(0.6–6.6)	1.2	(0.5–2.7)	2.0	(0.8–5.1)	0.9	(0.3–2.8)
Any anxiety disorders	3.8*	(2.1–6.8)	6.4*	(2.8–14.8)	3.5*	(1.9–6.2)	–	–	–	–	–	–
II. Mood disorders												
Major depressive disorder	10.3*	(5.1–21.0)	19.5*	(9.2–41.1)	10.4*	(4.8–22.3)	7.5*	(3.6–15.5)	10.6*	(4.6–24.3)	7.1*	(3.6–13.9)
Dysthymia	11.5*	(3.0–44.0)	30.6*	(6.6–141.6)	12.2*	(1.7–86.0)	2.1	(0.5–9.11)	2.8	(0.4–22.4)	2.4	(0.3–19.0)
Bipolar disorder	2.3	(0.5–10.4)	4.3	(0.6–29.0)	3.7	(0.6–21.1)	0.8	(0.1–5.1)	1.5	(0.2–15.6)	1.2	(0.1–11.4)
Any mood disorders	8.1*	(4.3–15.3)	15.9*	(8.4–30.2)	8.7*	(4.5–16.7)	–	–	–	–	–	–
III. Any impulse-control disorder[b]	12.7*	(4.9–33.0)	17.8*	(5.3–59.5)	14.4*	(3.7–55.7)	11.0*	(4.5–26.6)	9.5*	(1.9–48.8)	10.0*	(2.4–41.8)
IV. Any substance use disorder	6.1*	(1.1–33.0)	14.3*	(1.8–115.4)	21.0*	(4.8–92.2)	2.0	(0.5–8.0)	4.0	(0.7–22.8)	5.2	(0.8–31.3)[c]
V. Any disorder	5.9*	(3.6–9.4)	10.0*	(4.5–22.2)	4.7*	(2.5–8.6)	–	–	–	–	–	–

OR, Odds ratio ; CI, confidence interval.

† Insufficient cases, but included as one of the disorders in the ‘Any’ category.

– Not assessed in models adjusted for comorbidity.

[a] Discrete time survival models, assessed for respondents who completed part II (n=1031) controlling for sociodemographic variables (age, sex, education, marital status).

[b] Assessed within age range 18–44 years.

[c] Borderline significance : p=0.08 for social phobia and p=0.07 for substance use disorders.

* Significant at the 0.05 level, two-sided test.

Table 4

War period and mental disorders as risk factors for first onset of suicidality[a]

	Ideation		Plan		Attempt	
	OR	**(95% CI)**	**OR**	**(95% CI)**	**OR**	**(95% CI)**
Model 1[b]						
War periods						
Post-war	4.1*	1.9–8.5	6.0*	1.7–20.8	2.6*	1.2–5.8
Pre-war	0.6	0.1–4.1	0.7	0.2–3.0	0.8	0.2–3.7
During war	1.0		1.0		1.0	
Mental disorder						
Major depressive disorder before war	3.0	0.9–9.6	6.3*	1.8–21.9	6.7*	1.7–25.8
Impulse-control disorder before war	17.1*	5.1–57.9	†		25.5*	5.3–123.9
Social phobia before war	12.0*	1.0–143.0	60.9*	5.3–696.0	†	
Substance use disorder before war	–	–	–	–	270.6*	60.8–>999.999
Model 2[c]						
War periods						
Post-war	4.0*	2.0–8.0	5.4*	1.6–18.5	2.4*	1.2–4.8
Pre-war	0.6	0.1–3.9	0.7	0.2–3.0	0.7	0.1–3.8
During war	1.0		1.0		1.0	
Mental disorder						
Major depressive disorder during war	3.1*	1.1–9.1	4.0	0.7–22.1	4.3*	1.6–11.5
Impulse-control disorder during war	4.0	0.5–31.3	5.7	0.5–62.8	6.4	0.8–50.4
Social phobia during war	5.8*	1.9–17.5	3.0	0.4–23.5	6.0*	1.3–28.2
Substance use disorder during war	–	–	–	–	†	
Model 3[d]						
War periods						
Post-war	2.7*	1.3–5.9	3.3	0.9–12.3	1.7	0.8–3.6
Pre-war	0.5	0.1–3.0	0.5	0.1–2.6	0.6	0.1–3.1
During war	1.0		1.0		1.0	

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	Ideation		Plan		Attempt	
	OR	**(95% CI)**	**OR**	**(95% CI)**	**OR**	**(95% CI)**
Mental disorder						
Major depressive disorder after war	10.3*	5.3–20.1	13.6*	6.0–30.7	8.4*	4.1–17.1
Impulse-control disorder after war	15.3*	6.9–34.0	14.1*	6.7–29.8	7.5*	2.0–27.9
Social phobia after war	9.6*	1.9–48.6	13.9*	2.0–96.3	3.7	0.6–21.7
Substance use disorder after war	–	–	–	–	5.1*	1.4–18.5

OR, Odds ratios ; CI, confidence interval.

† Insufficient cases.

– Not included in model for suicide ideation and plan.

[a] Discrete time survival models, assessed for respondents who completed part II (n=1031). Each model was estimated separately for suicide ideation, plan, and attempt.

[b] Model 1 includes mental disorders with an onset before the war.

[c] Model 2 includes mental disorders with an onset during the war.

[d] Model 3 includes mental disorders with an onset after the war.

* Significant at the 0.05 level, two-sided test.